

## THE LIFE HISTORY OF *EVERES LACTURNUS AUSTRALIS* COUCHMAN (LEPIDOPTERA: LYCAENIDAE)

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### Abstract

The immature stages of *Everes lacturnus australis* are described. *Desmodium heterocarpon* (L.) DC. (Fabaceae) is recorded as a food plant in southern and central Queensland. Larvae from southern Queensland have a facultative diapause that seems to be broken by immersion in water.

### Introduction

*Everes lacturnus australis* occurs from central New South Wales to northern Queensland and the Northern Territory, and is also recorded from Lord Howe Island, New Guinea, New Britain and the Solomons (Common and Waterhouse, 1981).

The life history of the Indo-Malayan subspecies *E. l. rileyi* Godfrey was recorded by Corbet and Pendlebury (1956). However, there is no record of the life history of the subspecies occurring in Australia.

Here I describe the immature stages collected at Brisbane, with observations on the life history. The food plant near Mackay is also recorded.

### Immature stages

Egg (Fig. 1). Mandarin-shaped, with irregular pattern of fine ridges arranged in 2 oblique series at sides; ridges with very short blunt projections at their intersections; pale green. Average diameter 0.46 mm (N = 6).

First instar larva (Fig. 2). With long pale dorsal and marginal hairs; greyish white; thoracic and anal plates pale grey; head smoky grey.

Final instar larva (Fig. 3). Flattened and densely covered with golden setae; body green at sides and pale green dorsally, sometimes with red middorsal line; spiracles grey; head pale brown. Newcomer's organ present but inconspicuous; tentacular organs not visible, possibly absent.

Pupa (Fig. 4). Elongate, with long pale hairs; pale green or buff with scattered black spots and dorsolateral row of larger black patches; thorax with black middorsal line; abdomen sometimes with reddish middorsal and dorsolateral lines. Attached by anal hooks and central girdle.

### Life history

The food plant is *Desmodium heterocarpon*. I found larvae on *D. heterocarpon* var. *heterocarpon* at Brisbane and on var. *strigosum* at

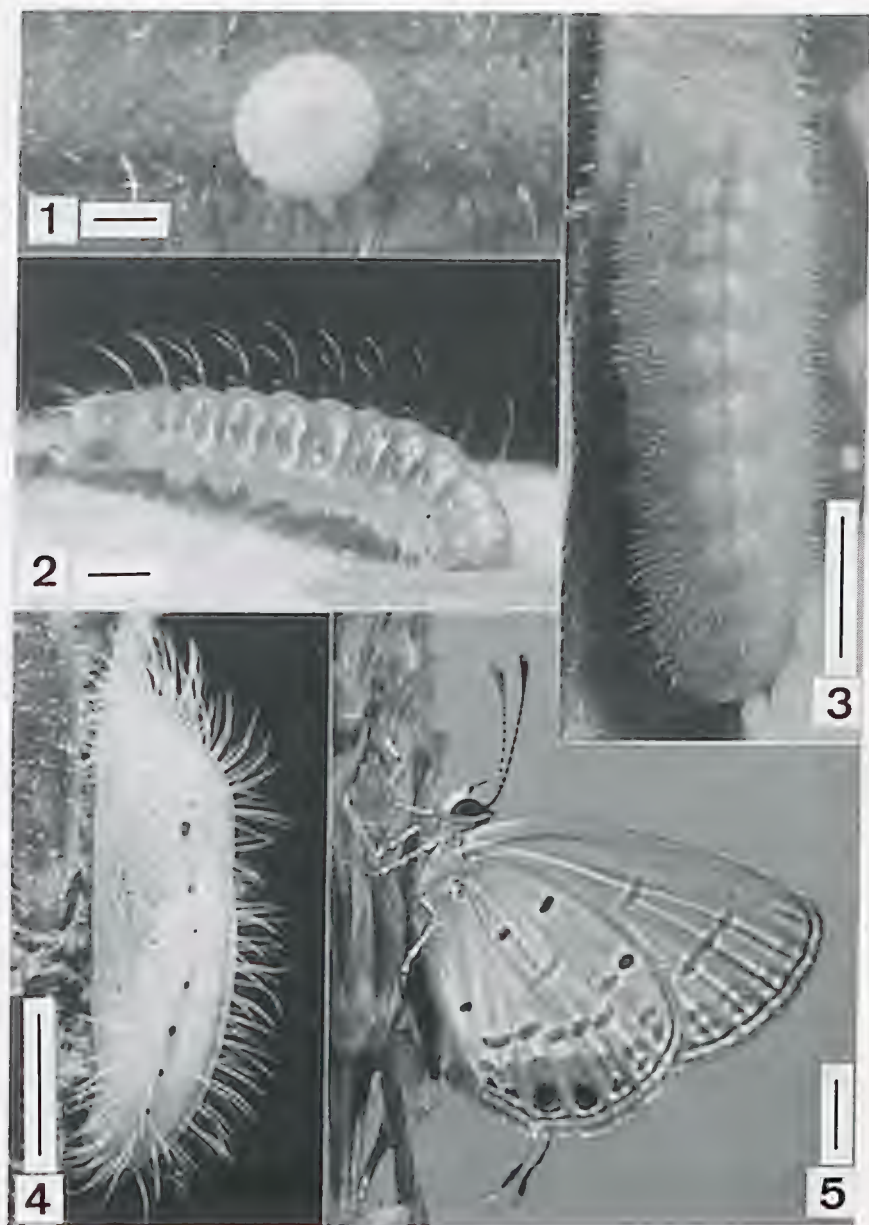
Seaforth north of Mackay. *D. heterocarpon* is the food plant near Ingham (Valentine, 1988).

The food plant is a herb that grows in grassy areas among open forest. Adults of *E. lacturnus* (Fig. 5) fly close to the ground. Eggs are laid singly on flower heads and seed pods. Small larvae feed mostly on the flowers. Large larvae feed externally on the pods, and are well camouflaged by their flattened shape, colour shading, and the covering of hairs which blend well with those of the pods. Larvae that I fed in captivity on the reddish flowers of the food plant developed a red dorsal stripe whereas those that I fed on pods did not. A larva from near Mackay was attended by a large black ant, but larvae are often unattended. Several larvae collected near Mackay were parasitised by tachinid flies. I have not found pupae in the field, although Valentine (1988) reported that in northern Queensland they occur within clumps of pods on the food plant.

The larvae are distinctive, and readily distinguished from larvae of other lycaenids *Zizina labradus labradus* (Godart), *Famegana alsulus alsulus* (Herrich-Schäffer) and *Euchrysops cnejus cnidus* Waterhouse and Lyell that feed on small legumes similar to *D. heterocarpon*. Larvae of these species are not as flattened as larvae of *E. lacturnus*. None has been found on *D. heterocarpon*.

I have found the immature stages of *E. lacturnus* at Brisbane from February to early June during the flowering period of the food plant. They are plentiful in March but scarce during May and June. I was unable to find eggs or larvae in late December 1989, nor could I find any flowers or pods on the food plant. I have not looked for larvae in January. Larvae were present on my only two visits to Mackay, early in February and in April.

Larvae collected at Brisbane early in March pupated in the same month. Pupal duration at 25°C was 8 days (N=2). Four large larvae collected on 12th June 1988 stopped feeding several days after collection and their colour changed to pale brown with longitudinal reddish lines. However, they failed to pupate. They were kept under observation in shaded conditions at ambient temperature. One individual had died by September but the remainder were still alive and in the larval stage. I thought the larvae may be drying out, so I immersed one in water for a short time: it subsequently pupated on 23rd September and the adult emerged soon after. Another larva died in October. The surviving larva was moistened on 25th November: it pupated on 29th November and had produced an adult by 11th December 1988.



**Figs 1-5.** *Everes lacturnus australis*: (1) egg, dorsal view; (2) first instar larva (head on right); (3) final instar larva (head at top); (4) pupa; (5) adult, underside. Scale bars (1, 2) = 0.2 mm; (3-5) = 2 mm.

I have never found larvae of *E. lacturnus* on any of the other legumes occurring at the collection site at Brisbane. *D. heterocarpon* flowers mainly in summer and autumn (Stanley and Ross, 1983). There would seem to be no food for the larvae for much of the year. Larvae apparently have a facultative diapause that may serve to maintain the population between flowering times of the food plant. Flowering of the plants and pupation of larvae may both be stimulated by rainfall. This is the first record of larval diapause in an Australian lycaenid.

### Acknowledgements

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